

IN THE SPECIFICATION

1. Please amend paragraph [0006] as follows:

[0006] In this known method, the light emitting polymers are ~~liquefied~~ liquified to form a so-called polymer ink. The polymer ink is printed onto a substrate via an ink-jet printing head.

2. Please amend paragraph [0016] as follows:

[0016] In such prior arrangements and methods, the HTL and the emission layer exhibit nonuniformity in layer thickness at the upper and lower rims thereof, which are effective areas for electro-luminescence emission. This occurs because the layer thicknesses of the ~~HTL and~~ HTL and polymer emission layer gradually become thinner, or the HTL ink and polymer ink run out from the channels.

3. Please amend paragraph [0018] as follows:

[0018] The present invention provides a polymer organic light emitting diode (OLED) which can prevent ink from a hole transport layer (HTL) or polymer emission layer from running out from channels, and in which the ~~HTL or~~ HTL or polymer emission layer has a uniform layer thickness.

4. Please amend paragraph [0020] as follows:

[0020] In accordance with an aspect of the present invention, there is provided an

organic light emitting diode (OLED) comprising a substrate having a first electrode layer formed thereon, an insulator layer formed on the substrate having the first electrode layer and forming a channel in a predetermined pattern, an organic polymer layer formed based on the channel and having at least an emission layer, a barrier formed at either side of the insulator layer of at least one end of the channel[[,]] for preventing ink for the organic polymer layer from running out from both ends of the channel, and a second electrode layer formed on the polymer organic layer.

5. Please amend paragraph [0042] as follows:

[0042] Preferred embodiments of the present invention will now be described in detail with reference to the accompanying drawings. An explanation will be given with the example of a passive matrix type polymer OLED. Although not shown in the drawings, the invention can also be applied to active matrix type polymer OLED. The structure of the substrate shown in the following drawings is substantially the same as that of the ~~conventional~~ substrate shown in FIGS. 1A and 1B. The same elements are denoted by the same reference numerals.

6. Please amend paragraphs [0048]-[0049] as follows:

[0047] In other words, as a layer formed of an insulator material, such as a photo-resist material, forms the left and right boundary limitations of the lines constituting pixels of a ~~full- display~~ full-display screen, ink forming the hole transport layer 5, as well as ink

forming the polymer emission layer 6, can be printed into the pre-structured channels. In such a manner, red-, green-and blue-emitting polymer materials are imprinted in a predetermined manner without flowing into neighboring channels or causing any mixing of [[s]] colors. Thus, the above-described partition structures form the channels and print lattices or lines on a substrate that is then built up to the ~~full-display~~ full-display screen. In the printing of the polymer materials, as shown in FIG. 1B, the hole transport layer 5 is formed at all channels and the polymer emission layer 6 is printed thereon. The polymer emission layer 6 is printed in various [[s]] colors. A plurality of channels of the respective [[s]] colors are simultaneously printed by multiple heads.

[0048] As also shown in FIG. 1A, as the second insulator layer 4 defining the channels 40 provides only lateral limitation for the channels and the channels are open at the upper and lower rims, the polymer ink forming the emission layer 6 can easily run out from the upper and lower rims of the opened channels. Therefore, the amount of ink at the upper and lower rims of the channels is less than that at central portions of the channels. Accordingly, after the HTL ink and the polymer ink are dried, the HTL and the emission layer exhibit nonuniformity in layer thickness at the upper and lower rims thereof, which are effective areas for electro-luminescence emission. This occurs because the layer thicknesses of the [[HTL-]] HTL and polymer emission layer gradually become thinner, or the HTL ink and polymer ink run out from the channels.

7. Please amend paragraph [0056] as follows:

[0056] After forming the first insulator layer 3, the second insulator layer 4 made of a photo-resist material is subjected to spin coating, followed by exposure and development, thereby forming cuboid-shaped structures. Typical dimensions of these cuboids are 1 to 5 μm in height, and 5 to 20 μm in width. The lengths of the cuboids range from several millimeters to centimeters depending on the length of the diode. The cuboids of the second insulator layer 4 are arranged in parallel to each other, and are positioned parallel to, and in the center between, each of the respective rows of the openings ~~[[31]]~~ 30. In such a manner, the channels 40 for the HTL- or polymer ink are constructed. These channels 40 limit the individual rows of red, green and blue pixels, and prevent ink from flowing into the neighboring lines. Both ends 41 of the channel 40 provided lengthwise are opened outward. The first and second insulator layers 3 and 4, respectively, can be formed integrally and simultaneously. Otherwise, the second insulator layer 4 can only be employed.

8. Please amend paragraph [0074] as follows:

[0074] Also, the blocking member 8 is~~[[,]]~~ preferably limited in width so that it does not touch the inner wall of the channel 40, that is, the internal surface of the second insulator layer, and also does not touch the barrier 7, which facilitates depositing a second electrode layer formed of a metal film on the printed ink layers during a subsequent step.

9. Please amend paragraph [0083] as follows:

[0083] In order to produce the repelling effect of the barrier 7 and the blocking member 8, as well as that of the second insulator layer 2 of the channel 40, against the [[HTL-]] HTL and the polymer ink, the substrate 1 is surface-treated in a next step. Here, the repelling effect is attained by microwave plasma treatment in the presence of a CF₄/O₂ gas mixture for 30 to 120 seconds.